



THE
Monthly Register
OF
Experiments *and* Observations
IN
Husbandry and Gardening;
FOR THE
Months of *June* and *July*, 1722.





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By RICHARD BRADLEY, *Fellow of
the Royal Society.*



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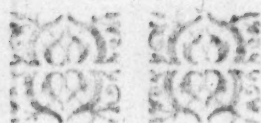
THE
Monthly Register

OF
EXPERIMENTS

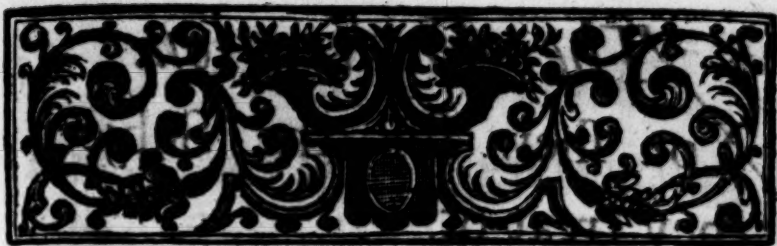
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Husbandry and Gardening.

FOR THE
Months of June and July 1752.

By RICHARD BRADLEY, Fellow of
the Royal Society.



L O N D O N :
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TO
Sir **NICHOLAS CAREW,**
OF
BEDDINGTON,

IN
The County of **SURREY,** Bart.

S I R,

 **A**M encouraged to
Introduce these Pa-
pers into the World
under Your Patronage, from
the Extraordinary Regard
You

The Dedication.

You shew for the Subject
they treat of.

YOUR Delightful Gardens at BEDDINGTON would alone be enough to draw upon You the Admiration of that Part of Mankind who study the Useful Pleasures and Tranquility in Life.

AND when we take a View of those Wonderful ORANGE-TREES which Your Noble Ancestors first made Familiar to our *English Climate*, and observe their Prosperity, and behold the agreeable Structure you have rais'd

The Dedication.

rais'd for their Preservation,
This, SIR, loudly proclaims
Your Genius worthy of the
Ancient and Venerable Fa-
mily You are descended
from.

A S the Design of the
Work which I now lay be-
fore the World, is, To In-
troduce among us such Plants
from Abroad, as may be
Useful and Delightful to our
Nation ; so I am assured,
That nothing can be more
prevailing over the Minds of
my Readers, than to Intro-
duce it under the Protection
of

The Dedication.

of a Gentleman who has so
Capital an Instance of the
Probability of what I pro-
pose, and who is so Generally
Admired for every Action
of his Life.

I am, Sir, with great Respect,

Your most Obedient

Humble Servant,

RICHARD BRADLEY.



THE
Monthly Register
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EXPERIMENTS
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IN
Husbandry and Gardening.

For the Month of JUNE, 1722.

RULES for Methodizing and Assorting a Parcel of Ground for the Use of a Family of Seven or Eight Persons; or from that Number to Twenty or Thirty in Family.



AMONG the Many I have conversed with of all Nations, and all Degrees, I find one Humour generally prevails in Point of Gardening; which is, That the more profitable a Garden is, the more it is admired; and the End of making and keeping a Garden,

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is, besides the Advantage it will bring to the Master of it, the Pleasure of having every Fruit and Herb brought fresh to his Table.

In the Course of my Observations, I have found this Design carried to a great Length in some few Places; bur, on the other Hand, great Numbers have failed in the Execution of their Design, either by over-cropping their Grounds, or by wrong proportioning their Quantities of Herbs or Fruit, or by neglecting to contrive a due Succession of their Crops.

The Over-cropping or Stocking of a Ground, in the first Place, robs it of its Strength, and where Plants grow too close together, whether their Roots or Tops are to be eaten, they are always small and useless, the best Seeds of Cabage-Letuce will produce Plants of no Value, if they want Room; the Seeds of the largest Roots will produce nothing of moment, if they do not stand at a right Distance one from another, which the Houghs used in the Gardens about *London*, will, in some measure, help to teach us. The Blades of the Houghs for Turneps, are about five or six Inches wide, while those for Onions, are but two Inches: But these Instruments I chiefly mention, beause they are seldom used in the Countries remote from *London*; for when the first

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first has gone through the Plants, though the Blade is but five or six Inches wide, yet the Turnep Plants remain generally about seven or eight Inches asunder, from the irregular coming up of the Seeds; and so the Onions will, after Houghing, stand about four or five Inches asunder, which is full near enough, if we expect to have them good, and well-rooted; and even at such a Distance, they will very well allow a good Draught to be made, during the Summer-Season, which will still help the remaining Plants to enlarge their Roots. So Cabage-Letuce, to have them good, should stand a Foot apart, if we plant four or five Rows in a Bed; but if they are planted in a single Row, we may set them nearer together; for every Plant which we expect to bring a large Head, must have Room for the Air to circulate freely round it; for if that is not allowed, the Plants will never spread, but run upright, and their Leaves will be watery and insipid.

The Roots either of Turneps or Onions, which commonly *Apple* above Ground, are always larger, as they have more Room and more Air about them; and then the Leaves are short, and the Juices are employ'd principally in the Roots. So in Carrots and Parsnips, though they run downwards into the Ground, yet as

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their Green Tops spread more or less, their Roots are smaller or larger.

The second Mistake, is, The wrong Proportioning the Quantities of these Esculent Herbs and Roots in a Garden, by which means we super-abound in one Thing, while we are in want of another; and happens chiefly from our judging wrong of the Nature and Design of the Things we plant or sow, or of their Use at the Table, or the Time which every Sort will last good.

We are to consider, that Pease will require more Room than any other Thing in a Garden, considering their Table-Use; for the Fruits of many Plants must go to make a Dish, and then a Crop of Pease seldom lasts longer good than Three Weeks or a Month; but then, because we must have many Plants, we are not to crowd them close together; for then we shall have a smaller Quantity of Fruit; and besides, the first Gathering when the Lines of Plants are too close together, breaks and bruises the Plants, so that they do not even bring a Quarter-Part of their Crops to Perfection. I have experienced, that ten Rods of the Ronceval, and *Dutch* Admiral Pease, have yielded more Fruit when their Lines have been set wide enough asunder, and have been well Stick'd, than three times the Quantity

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tity of Ground has done, where the Rows were as many more in Number, and twice the Quantity of Seed put into each Row: And besides, those that had Room enough, have brought good Pease for above ten Weeks together, by being water'd now and then, and the Pease gather'd carefully from them, without bruising the Plants. But though we might reckon ten Rods of such Pease to be enough for a Family, yet when we come to provide Carrots or such-like Roots, two or three Rods will prove much more advantageous than the ten Rods of Pease; for in the Roots there is little or no Waste; but there must be many Plants of Pease to yield as much profitable Eating, as one Carrot or Parsnip will do. I suppose a Carrot Root that requires about eight Inches Square of Ground, will fill the Space of a Pint; and the profitable Part of the Pease that require a Yard Square of Ground to grow upon, will hardly be more than half as much, considering what Air they must be allowed; and so every Thing in a Garden, according to the profitable or useful Part of it, should be consider'd.

Again; We ought to know, what Herbs or Roots are chiefly used or coveted in any Family, and proportion our Stock of every sort accordingly; for otherwise,
though

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though our Garden be fully cropt, yet if the favourite Herbs or Roots are not in full Quantity to the Master's Will, the Blame will fall upon the Gardener, and thus, much of the Garden, though it be fully cropt, becomes useless. Therefore, it would not be amiss, for a Gardener to enquire at his first coming into a Place, what Herbs or Roots will be chiefly expected or used in the Family, that they may be the Objects of his Care. And this leads one to consider,

Thirdly, The Neglecting to contrive a due Succession of Crops; for in that Case, we may lose half the Profit of our Ground, which ought never to lie idle; for, by good Management, one Acre may be render'd as profitable as four or five, with injudicious Management. Let us never be too late in preparing for our Winter Standing Crops; for we may lose a Third or Half Part of our Winter Store in Quantity, by a Fortnight's Neglect, and also the Goodness of our Crop will not bear any Comparison with such an one as has had due Time to strengthen it self. We should consider the Nature of the Plants we shall want, and when one sort begins to decay, turn up the Ground afresh, and renew it with another Sort of Plant; considering at the same Time, that one Tribe of Plants does not draw

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draw from the Earth the same Nourishment that another Sort will do; and therefore, always change the Tribes, and the Earth will have Nourishment enough for all, regaining what Strength she has lost by one Sort, while she is distributing to the others. The Sowing of Pease, then Turneps, and after them, Corn, is one Instance that Land will bear several Crops successively to good Advantage, without Manuring; but there are many more Instances to prove, that the Earth can never be render'd unprolifick, unless she is constantly constrain'd to feed one kind of Herb or Plant.

After these Hints, I shall proceed to a more particular Enquiry into the necessary Furniture of a Kitchen-Garden, for about seven or eight in Family, which is the Proportion I chuse, because there are more Families in *England* of about that Number, than of any other; and because also, I have been solicited by some particular Persons, to inform them of the Profit of a Garden for such a Family. What I shall say upon this Occasion, may likewise assist in the Accounts I shall give hereafter of the profitable Production of larger Gardens. But I must give this Caution with my Calculations, That bad Seasons, and other Accidents, must be allow'd for, they

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they may sometimes cross our Expectations.

One of my Correspondents, Mr. A. B. has a Garden to be disposed after this Sort, which consists of about Sixty Rods of clear Ground, or Eighty Rods, were we to reckon the Walks, and the Ground whereon is planted the Espaliers of Fruit Trees? But let us now examine, what may be done with the Sixty clear Rods of Ground, which is such a Piece of Land as will very well supply a Family of about seven or eight Persons, with every Thing necessary; and first, of the Standing Crops, or such Herbs, Roots, and Plants, as are to remain for a long Time in one Place. In which Parcel of Ground is likewise included a Space for Hot-Beds, &c.

For the Hot-Bed Ground, we may allow four Rods of Land, after the Rate of sixteen Foot and a half Square each Rod. In this Piece of Ground, when it is fenced, we may employ four Frames, with three Lights apiece, for the Production of our earliest Cucumbers and Melons, and for the Raising our Annual Flowers, to be planted for Ornaments in the Borders among the Fruit-Trees. The Method, see in my *Kalendar*. In this Piece of Ground, tho' we employ only four Frames, yet we must set apart two Rods, that we may have

have

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have Room to shift the Frames or Hot-Beds, so as to preserve a Succession of Heat to the tender Plants; and the other two Rods will serve for one Ridge of Cucumbers, and two of Melons, each Ridge two Rods long, and about five Foot wide, including the Allies. If we have two Ridges of Melons of this Length, we may have about sixteen Holes of Plants, and upon each Hole, with good Management, we may have three or four good Melons at least; so that our Crop may amount to about Thirty Brace, besides what we might expect from our forward Beds.

The Ridge of Cucumbers will bring a plentiful second Crop, that is to come in about the middle of *May*, when the first Crop in the Frames begins to decline; but for the three Ridges, we must have two Dozen of Glass Bells at least. At the Back of the Frames, we might also have a few Kidney-Beans; but they must be well taken care of, lest they over-grow the Cucumbers and Melons. And upon the Side of one of the Beds, when it begins to cool, we may sow Sellery.

But besides the early and the second Crop of Cucumbers, we must provide some to succeed for the later Months, and those must be sown in the Natural Ground. These are generally called *Picklers*, and for that use, should be gather'd as soon

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as the Fruit first appears. For this Use I have allotted two Rods of Ground; but as this sowing is not to be 'till near the beginning of *May*, we cannot propose to inter-plant the Cucumber Holes with any thing, unless it be with Cabage Lettuce, or Radishes, which will be off before the Cucumbers can hurt them.

Ground for pricking out of young Plants, and for young Salads; 3 Rods.

THE next Spot I shall take Notice of is, A Piece of Ground for pricking out of Seedling Cabages, Savoys, Cauly-Flower Plants, Sellery, Endive, Annuals, &c. and for raising young Salads upon: And for that Use, I allow three Rods, which is sufficient for the Plants which are necessary to be raised for such a Family, 'till 'tis their Time to be planted out at due Distance for perfecting themselves. This Parcel of Ground will certainly contain a greater Number of young Plants, than can be planted out for good, in such a Garden as I mention; but as the Expence of a little Seed, is no great Matter, we shall gain this Advantage by it, that we shall have enough to guard against Hazards of Weather, &c. and, perhaps, to oblige a Neighbour.

We

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We must, also, allot Half a Rod of Ground, in some By-place, for a Plantation of Horse Radish, and another Half Rod, for a Plantation of Skerrets and Eschalots.

Ground for Pot-Herbs, 4 Rods.

THE next Parcel of Ground must be appointed for twelve Beds of Pot-Herbs, which, allowing five Foot and half for the Breadth of each Bed and Ally, will take up four Rods of Ground; and should be planted thus, *viz.* Two Beds of Minth, one of Red-Sage, one of Sage of Virtue, one of Peneroyal, one of Hyfop, one of Winter-Savory, one of Sweet Marjoram, one of Burnet, one of Clary, one of Thyme, and one of Parsley. I omit to mention Borage, Rosemary, Angelica, and Lavander, for these Beds, because Borage will certainly find some Place or other among the other Crops, and Rosemary will do well in By-places well exposed; as Angelica will fill some of the most shady Corners; and for Lavander, it will do best in an Edging; and one may likewise have Edgings of Sorrel and of Parsly; for we should sow Parsly twice every Year, and especially a good Crop against Winter. When a large Bed will afford but little, we may sow a Line of

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Marygolds in a spare or vacant Place, rather than make a Bed on purpose, because they do not last. I have allow'd full Ground enough in the above Articles, and besides, as All Men are not of the same Taste, perhaps, some of the Herbs I mention, may not be thought useful; if they are not, the Ground may be planted or sown with other Things. But it is very necessary, however, to plant our Pot-Herb Garden as near the Kitchen as possible.

Ground for Asparagus, 3 Rods.

WE come, in the next Place, to provide such a Crop of Asparagus, as may sufficiently supply a Family of seven, to have a good Quantity every Day, from *April*, that they begin to come up, 'till *June*, that we must leave off cutting them. I reckon, that little more than three Rods of Ground is sufficient; that is, to have four Beds of Thirty-three Foot long each, and the Breadth of each Bed four Foot, and the Allies two Foot. These Beds, when they are full crott, will afford us about Seven or Eight hundred of Asparagus in a Week, which, I suppose, will be enough for such a Family as I mention; and they will last good about nine Weeks. The Method of preparing and planting these Beds, may be seen in
my

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my *New Improvement of Planting and Gardening*, and also some Particulars relating to them, in my *Monthly-Papers* of the foregoing Year. However, the Plants must be set about ten Inches apart, and be Plants of one Year old.

But besides these Beds of Asparagus for the Spring Season, I allow three Rods of Ground for Seminaries and Plantations of Asparagus for the Use of Hot-Beds about *Christmas*, or in the Winter-Months: I have directed their Management in the above-mentioned Books.

The first Year of planting the Asparagus Beds, we are to sow the whole Piece with Onions, which will afford enough for a Family of six, for one Year; for we should not open the Allies 'till Winter, and then the Earth taken out of them, must be flung upon the Beds.

If these Beds lie all together, they should run North and South, because we should set a Row of forward Beans in each Alley every Winter. We must note, also, that the first Year, by sowing Onions upon these Beds, we shall have three Rods of Ground to spare in the other Part of the Garden.

Another Standing Crop is our Artichokes, for which I allow two Rods of Ground, wherein the Lines are to be three Foot asunder, and the Plants in each
Line

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Line to stand about two Foot apart ; so that in such a Spot of Ground, we shall have about One hundred Plants ; out of which we may expect as many good Flowers, and about half as many indifferent good ones, besides small ones, which are excellent fry'd, or eaten raw with Pepper and Salt. Between these Rows of Artichoke Plants, we may in the Spring have a Crop of Spinach and Radishes.

In the next place, we are to allow two Rods for Raspberries, which should be planted in single Lines, rather than in Beds : The Lines should be 4 Foot asunder, and the Plants in each Line a Foot apart ; so they will bear better, and bring larger Fruit. The Lines of Raspberries, at four Foot Distance, and a Rod in Length, will be ten in Number, and between these Lines we may have eight of Coleworts, for the Spring Service, when Greens are scarce, which is chiefly occasion'd by the turning up our Ground in *February*, to be fresh cropt. But I come now to speak of Crops which are of short Duration, and must be renewed every Year, and even some of them twice and three Times in a Year, or at least to be so planted, as to follow one another in different Seasons. I shall begin with the Bean.

5
Ground

Ground for Beans.

BESIDES what we have mentioned of Beans to be planted in the Asparagus Allies, we must at least allot four Rods more of Ground for Family Use; that is, three of them to be planted for Summer-Crops, with the broad *Windsor*-Bean so as to make two distinct Crops; the other Rod, as well as those planted among the Asparagus, must be for early Spring Crops of the *Hotspur* or *Spanish* Bean: And of these, besides what I have said of the planting them, and cutting them down, to vary the Times of their Ripening, we may still gain a late Crop from them, if we cut down a Parcel of them after all the Beans are gather'd: They will spring from the Root afresh, and bring us a middling Crop late in the Year.

Among my Enquiries this Year, I have examined into the Quantity of broad Beans that a Rod of Ground will produce, planted with double Lines a Foot asunder, and the Distance of two Foot between the double Lines. The Bean Plants are supposed to be six Inches apart.

In a Rod of Ground, at this Rate, will be seven double Lines, or fourteen Rows of Beans; each Row of Beans will contain about Thirty-four Plants, and a double
Row

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Row Sixty-eight Plants, which in a Rod amounts to Four hundred and Seventy six Plants.

I have observed several Parcels of Beans this Year of the Broad or *Windsor* Kind, and I find that they are very inconstant in their Bearing, some Plants bringing Five-and-twenty Cods, others Eight or Nine only: So that were I to make a moderate Computation, one would suppose every Plant could hardly bear less than ten Cods, reckoning one with another; and in some of these Cods, it is not very rare to find three Beans, though more generally two, but for the most Part but one Bean in a Cod: However, to judge as low as possible, I shall only reckon, that a Plant will bring ten pure Beans clear of the Cods, though I have numbred above twenty Blossoms upon a Plant.

In the Measure of the Broad Beans, when they are taken out of the Cods, I find that Fifty Beans fill a *Winchester* Pint Strike-Measure; so that then we may expect from a Rod thus planted, about 47 Quarts of Beans Strike-Measure, or somewhat less than ten Gallons Heapt-Measure. We may remark, that if we were to set the Beans nearer together, they would bear less Fruit. However, at the Rate I set down, we may suppose, that 3 Rods will produce about 30 Gallons
of

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of broad Beans, clear of their Shells; but this must be while they are fit for eating; for when they dry, they will lose above two third Parts of their Measure; that is, a *Winchester* Pint, Strike-Measure, will hold about One hundred and Fifty Beans, so that a Rod will take about three Pints of dry Beans to plant it.

The *Spanish* Bean is of a much smaller Kind, than the former; but is a great Bearer, so as to bring, on every Plant, twice the Number o Beans generally found on the *Windsor* Kind. One of the *Spanish* Beans is about one third Part as big as a *Windsor*-Bean; so that I compute, that a Rod of the *Spanish* Bean, will yield about six Gallons, or about two third Parts as much in Measure, as a Rod of Ground planted with *Windsor*-Beans; and those among the *Asparagus*-Beds, will yield as many more, and especially because these Plants have more Air. So may we compute the Whole to amount to about twelve Gallons, which will very well afford us good part of Sixty Days Diet, besides some Dishes from After-Crops: While we have these in Use, let us spare those Roots and Herbs which will hold good in that Season. The proper Directions for managing these Crops, I have laid down in my *New Improvements*.

D

Ground

Ground for Pease, 8 Rods.

I HAVE observed in my *Introduction* to this *Chapter*, that the Pea requires more Room than any other Thing in a Garden, and have given some Reasons why it is so; therefore I allow in this Garden, 8 Rods of Ground for Pease, besides the Advantage we may have of shifting the Pease in the Ground I allow for Carrots, which is 3 Rods, so as to set an early Crop of Pease upon it; for the Carrots must be taken out of the Ground when they have done growing, and laid by in dry Sand. So then we shall have eleven Rods of Ground for Pease, besides a Row, if we please, close under a South-Wall to be Stick'd up: Though they will not rise very high, yet they will bear better, and ripen sooner, than if they were to lie upon the Ground.

But suppose we begin with the Carrot-Piece, for an early Crop of Pease; sow the Lines double and the Pease four or five Inches apart, and the Lines about ten Inches asunder to be staked up; but the Allies between the double Lines, must be about two Foot Wide, so that we may have six double Rows in a Rod, or in three Rods, about eighteen double Rows, of sixteen Foot and a half long. Now were

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were all these Pease to stand the Weather, which is very doubtful, if we put them in before the End of *November*, then there would be about One hundred Plants in a double Row; and a single Plant of this sort will bear, if it be Stick'd up, about twenty Cods, which will carry from about five to seven Pease apiece, whose Pease, when they are about the Bigness of the following Letter [O], will fill a Strike Quarter of a Pint, Wine-Measure, from One hundred Cods; that is a Pint from Four hundred Cods, or a Quart from Eight hundred Cods; so that we must have Forty Plants, to produce a Quart of Pease for the Table, of the Bigness I mention; or if we allow for Hazards, and suppose Fifty Plants to yield a Quart, then a double Row of Plants will yield about two Quarts; and the three Rods of Pease, or the eighteen double Rows, will yield Thirty-six Quarts, or nine Gallons, Strike Wine-Measure: But if we measure them by the Heap'd *Winchester*-Quart, and allow for the Loss of those which will grow too old for eating green, we cannot well reckon above five Gallons of clear green Pease for the Use of the Table; so that we may have about a Dozen or Fifteen good Dishes of Pease from this Parcel.

The other Ground we allot for Pease, which is eight Rods, should be divided into three Parcels, *viz.* Three Rods for the Sugar-Pea, to be sown in *February*, after the manner of the former, which will follow the earliest Crop in ripening, and yield about five Gallons of clear Pease, *Winchester-Measure*, besides several Quarts for Seed or Winter Use; though it is customary to sow them in single Rows, and then the Allies between the Lines, must be about two Foot and a half asunder.

We are next to sow three Rods of large Pease, such as the *Spanish-Mooretto*, or the *Rounceval* or *Dutch Admirals*. These must be planted in double Rows in *April*, the Lines of Pease to be a Foot apart, and we must allow half a Foot on the outside of every double Line, to place our Stakes, which Stakes must be bushy, such as the Boughs which are generally cut for Baving, called Brush-Wood. These ought to be full seven Foot long, so that they be allow'd above half a Foot to be in the Ground, and that the two Lines be tyed together on the Top, so as to be full six Foot high. The Figure of this Staking, at the Ends of every double Row, will almost represent the Letter [V] revers'd, and every double Row of Stakes will measure near two Foot at the Bottom. Between every two double Rows of
Stakes,

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Stakes, we must leave a Passage of four Foot wide, so that then there will be about six Foot from the Outside of the first double Row, to the second double Row. So in three Rods we may have five double Rows of these Pease about Thirty-three Foot long each. By this means, if they are Staked early enough, and water'd in a dry Time, and, above all, carefully gather'd, or as I used to direct, *i. e.* To cut off the Pease with Scizzars; after this manner, they will last bearing a long Time, and produce near twice as many Pease, as those that are order'd the common Way. About Fifty Cods will yield of clear Pease, as many as will fill a Quarter of a Pint, Strike Wine-Measure; or Four hundred Cods will yield a good Wine-Quart; and a Plant preserv'd in Health, will bear about Thirty Cods: But supposing them to bear only Twenty Cods apiece, then a double Row of Thirty-three Foot long, allowing the Pease to stand at least six Inches apart, will yield, when they are taken out of the Shells or Cods, about seven or eight Quarts, and the whole about Thirty-five Quarts, or somewhat more than nine Gallons, Strike Wine-Measure, or for eating Green, about seven Gallons *Winchester-Measure*.

There

22 *Experiments, &c. in*

There remain yet two Rods to be sown with the same sort of Pea in *May*, for a late Crop which will afford us above four Gallons of clear Pease, *Winchester-Measure*: So that the Produce of eleven Rods of Pease, thus order'd, will be about Twenty-one Gallons of clear Green Pease for eating, besides a good Quantity for Seed. Such a Quantity may serve to afford us, at least, Fifty large Messes, to be gather'd between *May* and the End of *September*; and if there should be more than we can dispense with while they are Green, we may use them dry in the Winter, for boiling; and the Rounceval Pea especially is extreamly good. It would be well to plant one Rod of this Piece, with the sort of Pea which is common in *Holland*, which the People eat Shells and all, as we do Kidney-Beans.

Ground for Kidney-Beans, 2 Rods.

THOUGH I allow but two Rods of Ground for Kidney-Beans, we are to understand, that they will afford as much profitable Fruit, as four Rods of Broad-Beans, for in these there is no Waste; and from the Time of the first Crop's beginning to bear, about the Middle of *June*, they continue Good 'till the End of *September*, with a little Care.

In

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In setting of these, the Lines should be single, and about three Foot distant from each other, whether they are to run up Sticks, or if they are of the new Dwarf-sort, which does not climb at all; for they will spread more than a Foot and a half, and therefore should be set about six or eight Inches asunder in the Lines, and have Liberty to spread in the Allies: Besides, Room must be left sufficient to walk between the Rows. We may set a Rod of each Sort, one in *April*, and the other in *May*, especially the climbing Sort, the latest of the two; for the Dwarf-sort is the most hardy, and bears very plentifully. If they are well managed, we may reasonably expect from the two Rods, above three Bushels of Beans fit for eating, and they will be an agreeable Change among the Summer-Crops.

Ground for Colly-Flowers, 2 Rods.

I ALLOW two Rods of Ground for Colly-Flowers, which we must plant about three Foot asunder, that they may spread their Leaves, and bring large Flowers, which they will not do, if they stand close together: So in the two Rods to be planted three Foot asunder, we shall have about Sixty Plants, or about ten every Week,

24 *Experiments, &c. in*

Week, while they last. The Method of managing them for the Spring and Autumn Crops, is in my *Kalendar*. Note, These 2 Rods are for the Spring Crop, to serve part of *May* and *June*; and when they are off, the same Ground may serve to plant out our Sellery for Blanching. The Rows for Sellery must be better than two Foot apart, and the Plants six Inches asunder: From whence we may draw Sellery from *August* 'till *February*. Or if we think that this Spot of Sellery will be too much, plant part of it with Endive for Blanching; but if we use it Stew'd at the Table, or in Soup, we must find some other Spot to plant more of it; for these Ways of using it, destroy a great deal.

Ground for Cabages and Brocoli, 5 Rods.

I RECKON there cannot well be less than three Rods of Ground employ'd for Cabages, and especially if we have a little Warren of that sort mention'd in my last Year's Remarks. The Cabbage-Plants standing at two Foot Distance, will give us about Twenty Rows of sixteen Foot and a half long, or One hundred and Eighty Plants; which, besides the regular Cabages they will produce, will furnish us with a large Store of Young Sprouts,

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Sprouts, even exceeding the Cabages themselves in Goodness.

I also allow two Rods of Ground for Brocoli, which being planted at about a Foot Distance from one another, this Spot of Ground will carry about Two hundred and Fifty Plants, whose Business being chiefly to sprout, the Plants do not require to stand at so great Distance as the Cabages. 'Tis the Flower-Stalks of this Brocoli, that are used at the Table. They must be taken just when they are shooting to blossom, and the outer Coat or Skin of them pil'd off; they boyl in about three or four Minutes, and eat as well as Asparagus.

*Ground for Savoys, or Savoy Cabages,
2 Rods.*

THOUGH we are provided with three Rods of Cabages, we may yet allow two Rods of Ground for Savoys, which in the Winter, and towards the Spring, will afford us a very agreeable Variety. These must be planted at the same Distance as Cabages, and then the two Rods will bear about One hundred Twenty Plants, the Offal of which will help to feed our Warren. When we plant our Ground for Cabages and Savoys, we might sow it with Spinach and Ra-
B dishes,

26 *Experiments, &c. in*

dishes, which would be fit for the Table, before the Plants began to spread.

Ground for Carrots, 3 Rods.

SUCH a Piece of Ground will afford us a large Quantity of Roots, either to be drawn in the Summer, or for Winter-Use, and in them there is no Waste; for what we can spare, the Hogs will eat, and the Green Tops will be of Service to the Rabbits. So that in one shape or other, they will all come to the Table. These, if they stand at a right Distance, will be in Number about Four hundred upon a Rod, or about One thousand Two hundred upon three Rods of Ground. Besides, we may sow with them some Sorts of Cabage-Letuce, which will be fit to eat before the Carrots begin to grow large. *Note*, Cabage-Letuce will boil very well. Upon this Piece of Ground, when the Carrots are off, it is, that I have proposed sowing our early Crop of Pease, or if we were to suppose this Piece of Carrots to bring only a Thousand Roots, they will last a Family of six or seven very well for six Months, to be dress'd every Day.

Ground

Husbandry and Gardening. 27

Ground for Parsnips, 2 Rods.

THIS Ground must be sown when we sow our Carrots; but the Root must not be taken up 'till *November*, and then be lay'd in the House. We may have about Six hundred Roots in the two Rods, if the Seed be good, and if they are more than we can use in the Kitchen, our Swine will feed extreamly well upon them. These are for our Use in the Winter and Spring, and, if managed according to my Directions in my *New Improvements*, will last good 'till *June*.

Ground for Potatoes, 3 Rods.

THREE Rods of Ground, well planted with Potatoes, will yield us about six Bushels of Roots; but we must not expect any other Crop upon it while the Potatoes are growing. Such Land as is esteemed the worst, will do well for these Roots: And considering how much Profit they bring to a Family, I wonder they are not more generally propagated in the poorer Parts of our Country.

Ground for Onions, 3 Rods.

THESE three Rods may be employ'd the first Year of making our Garden, for a Crop of Pease for Seed, or for boyl-ing in the Winter ; for the first Year, we shall have a sufficient Quantity of Onions upon our Asparagus Beds. This Piece being employ'd for Pease, will yield in a Summer about five Gallons of clear Pease, after they are thresh'd ; and when it is used for Onions, it will bring about three Bushels in a Summer. But in this, as in other Parcels of Ground, which I have mark'd, we must observe, That every Crop we sow in it, be of a different Tribe from what has been before, and so shift the Crops on each Spot of Ground every Year.

Ground for Turneps, Summer-Crop, 2 Rods.

I ALLOW two Rods of Ground for a Summer Crop of Turneps ; for though our Garden will be well stored in Summer with many Varieties, we should by no means be without some Turneps, to change now and then with our other Garden-Dishes. They will, moreover, be of good Help to our Warren, and their Offals will likewise assist to feed our Swine,

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so that nothing will be lost. These Turneps will stand at about the same Distance as the Parsnips; so that in the two Rods we may reckon about Five or Six hundred Roots. When the Turneps are off, this Piece may be sown with Spinach for Winter.

Let us now see what Profit we may expect from our Sixty Rods of Ground, full cropt, as I have directed. The Account is as follows.



TABLE



T A B L E

OF THE
P R O F I T S

ARISING

*From the afore-mention'd Sixty
Rods of Ground, planted as
aforesaid.*

Number of Rods of Ground.	Profits of the said Rods of Ground.
A 4 Rods for the Hot-Bed Quar- ter, will carry 4 Frames, and 3 Ridges; 2 of which should be for Melons, and one for Cucumbers. The Produce of these will be also annual Flowers, Sellery, and Colly- flower Plants, &c. . . .	Melons in one Frame, about . . . 10
	Melons on the two Ridges, or 16 Holes } 60
	In all Melons 70
	Cucumbers in 2 forward Frames, abt. 60
	Second Crop of Cucumbers upon one Ridge of 8 Holes, reckoning 20 Fruit on each Hole, which is a very small Number } 160
	In all Cucumbers 220

4 Rods Carry'd over.

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A Rods brought over.

B

Rods are allow'd for Pickling Cucumbers, set in Holes four Foot asunder, or in Lines to run up Stakes, may contain about 32 Holes, or 13 Lines of Plants, besides Cabbage-Lettuce and Radishes, which will soon be off

Cucumbers 30 on each Hole, will amount to in this Piece . . . } 969

We may safely reckon 1000, if they are well managed.

C

Rods of Ground for young Salads, pricking out of Plants, besides Fenel, Dill, and Rocabole

Young Salads of Cresses, Chervil, young Radish, young Turnep, or Rape, young Mustard, young Lettuce, Taragon, Purslane, Nasturtium Indicum, and in the Winter, brown Dutch Lettuce, half Cabbage. From hence, and the other double-cropt Parts, we may gather a Salad every Day in the Year. Salads } 364

D

a Rod for Horfe Radish, Skerrets, and Eschalots . . .

Half a Rod of Horfe-Radish, will afford Roots about . . . } 159

Quarter of a Rod of Skerrets, will contain Plants about 150, and 'tis common to have 3 and 4 Roots on each Plant, so we may reckon } 492

Another Quarter planted with Eschalots, will produce about Pounds Weight } 12

E

Rods of Ground for Pot-herbs will produce

Minth, Sage, Peneroyal, Hyfop, Winter Savory, Sweet Marjoram, Burnet, Clary, Parsley, Thyme, Sorrel, Rosemary, Burrage, Angelica, Lavendar, Baum, some sort or other to be gather'd every Day in the Year. Parcels . . . } 365

F

Rods of Asparagus in full Crop, will produce . . .

Asparagus, after the Rate of 700 per Week, and lasting good for 9 Weeks, will bring about, Hundreds } 63

Or the first Year about two Bushels of Onions, if they are healthful. } 42

U Rods Carry'd over,

Asparagus carry'd over : : : 42

32 Experiments, &c. in

17 Rods brought over. Hundreds of Asparagus brought over 60

F

2 Rods of Asparagus for Hot-bed { One Hot-Bed, which may be
Use, will produce } planted with 1 Rod of Roots, full
Crop, will produce abt. Hundreds } 8

Hundreds of Asparagus in all . . . 68
Or Buds, in Number . . . 6800

G

2 Rods for Artichokes, will { Of good Flowers or Heads, about : : 150
produce, *besides Spinach and* }
Radishes in the Spring . . . } And of Suckers or small Flowers, abt. 150

H

2 Rods of Raspberries planted in { From the Ten Rows of Rasp-
Ten Rows, will produce, be- } berry Plants, we may gather a-
sides Colewort Plants, &c. } bout . . . Gallons } 5

Changeable Crops.

I

4 Rods for Beans are princi- { From 3 Rods of broad Beans,
pally set aside for Summer- } if they are set wide enough asun-
Use } der, we may expect of Beans, clear
of the Shells . . . Gallons } 30
From 1 Rod of *Spanish Beans*, }
clear of their Shells } 6
To which we may add the like }
Quantity of *Spanish Beans* from the } 6
Asparagus Quarter }
In all, we have Gallons 42

K

3 Rods of Ground for Pease; { Three Rods of the Sugar Pea,
principally set apart for that } will yield of Pease clear of the
Use in Summer: As also of } Shell, about . . . Gallons } 5
Pease sown upon the Carrot- }
Quarter } Three Rods of Rounceval, or
Dutch Admiral Pease, will yield of }
Pease clear of the Shells, abt. Gallons } 7
Two Rods *Spanish Mooretto*, }
clear of the Shells, will yield . . } 4
Gallons }
To these we may add the Pro- }
duce of three Rods early Pease }
sown upon the Carrot Quarter, }
which will yield about . . . } 5
Gallons }
In all the Measure of Pease clear }
of the Shells, will be about Gal- } 21
lons, *Winchester Measure* . . . }

5 Rods Carry'd over.

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36 Rods brought over.

L

2 Rods for Kidney-Beans : { The Produce of Two Rods
of Kidney-Beans, will be about 4
Bushels }

M

2 Rods are allow'd for Colly-
Flowers, for the Use of the
Spring, and the same Ground
to be afterwards trenched,
for blanching of Sellery

{ This Piece will afford us about
Sixty good Colliflowers in May
and June Flowers } 60

{ The blanched Sellery, which
may grow upon 2 Rods, will afford
in Plants about } 450

N

3 Rods for Cabages : : { Which may serve for 100 Salads,
or if used in Soups, or Stew'd, will
not last above 30 Days, for a dozen
Plants will make but a little Shew
at the Table, in those Dresses } 180

{ The three Rods for Cabages
will afford us about } 180

{ The Sprouts of the same will
amount in Quantity to about as
much as the Neat Cabages: So
that to reckon them as Cabages } 180

{ Then in all, besides the Offals
for Rabbits, there will be to the
Quantity of } 360

O

2 Rods for Brocoli Plants : { Two Rods of Brocoli will con-
tain about Two hundred and Fifty
Plants, from whence, when they
are in their sprouting Perfection,
we may gather about eight or ten
Sprouts apiece, as big as Asparagus: 2000
The best is to take them when
their Sprouts are pointed with the
Flower-Buds a little before they
would blossom. So we may ga-
ther about Sprouts }

P

2 Rods for Savoy Cabages { We may reasonably expect
from these Two Rods, of good
Heads, about } 120

{ But as these come towards
Winter, their Sprouts will be but
few. However, their Goodness
makes amends. We shall reckon
the Sprouts of these equal to
Fifty full Heads } 50

In all : : : : : 170

47 Rods Carry'd over.

34 Experiments, &c. in

47 Rods brought over.

Q
3 Rods for Carrots { I compute that this Piece will
bring of good Carrots about . . } 1000

R
2 Rods for Parsnips { On this Piece of Parsnips, we
may expect, Roots, about Five } 600
or

S
3 Rods for Potatoes { These Three Rods of Ground
will yield us of Good Potatoe- } 6
Roots, about . . . Bushels

T
3 Rods must be allow'd for
Onions after the first Year,
but as the first Year we shall
have a Crop of Onions upon
the Asparagus Beds, we shall
during that Time, sow it
with Pease for Winter-boil-
ing } These three Rods will bring
us of clear Pease, after Thrashing,
about . . . Gallons . . . } 5

V
2 Rods for a Summer Crop of
Turneps { This Piece of Ground for Tur-
neps, will contain, of Roots, abt. } 600
Five or

60 Rods the Total.



H A V.

Husbandry and Gardening. 35

HAVING taken a View of the principal Crops to be raised in this Parcel of Ground, we must observe, That as soon as any of them are off about *July*, we must then provide for the Winter; such as Carrots, Spinach, and such others as we may chiefly desire; and if we should happen to have more Ground vacant than we could well Crop at this Season, it should be trench'd up, to lie open the Winter, for Spring-service.

From hence we may observe, how a Piece of Ground of Sixty Rods may be disposed for a Kitchen Garden, and what will be the Produce of it, if the foregoing Directions are exactly follow'd: I have likewise endeavour'd, in the parceling it, to set down the Quantity of every Sort, either of Herb, or Root, which may be produced upon each Parcel appointed; but I desire my Reader will have this Regard to a Calculation of this Nature, that bad Seed, or bad Seasons, may sometimes bring him short of his Expectations; and when I suppose a Number of Roots upon a Rod of Ground, they may not all, perhaps, be fit to bring to the Table. And again, we must observe that every particular Gentleman has a Taste to himself, which may make him desire either more or less of each
Sort

36 *Experiments, &c. in*

Sort of Herb, than I have appointed. It will then be necessary for him to consider well of what he likes best, before the Work is undertaken, and from these Tables to collect what Quantity he may reasonably expect or desire from this or that Proportion of Ground, and then judge how to parcel his Garden, so as to reap his Desire from thence; for, I suppose, one great Reason why so many complain of their Gardens and Gardeners, is the want of this Consideration, and of giving their Gardeners a List of what Things they most delight in; for without such Instructions, it is the Business of a good Gardener, when he has a Ground under his Care, to have something of every Sort, and perhaps those Things which he has happen'd to cultivate in the greatest Quantities, may prove the least acceptable to the Master, and then so much Ground is, in effect, lost to the Owner; or if there should happen to be the largest Share of the Ground cultivated agreeable to the Owner's Desire, yet whatever is not so, is sometimes esteem'd as so much Loss, unless we allow such a Parcel of Land for the Entertainment of those of our Acquaintance, who differ from us in their Taste of Garden-produce.

But

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But let us consider a little further of this Matter, with regard to the Number in Family, who are to partake of the Product of our Garden, and besides the singular Taste of the Owner, which must be first regarded, let those Things be cultivated which are useful in the Family-Diet; for whoever has seen the Fruiterers Bills for Herbage and Roots to Families, which are pretty Numerous, will find that a Garden does not a little contribute to save in the Expence of House-keeping: It is not very rare to see Bills from Fruiterers and Herb-shops, of one Winter's standing, to amount to Sixty, Eighty, an Hundred, and sometimes an Hundred and Fifty Pounds, where the Families are large; and then let us judge whether that Article is not worth Consideration; or whether a Garden of our own, well-ordered, will not be advantageous to us: And besides the Crop we have in the Winter, our Summer Crop is still much more profitable.

When I first calculated the foregoing Tables, my Design was to dispose of Sixty Rods of Ground for a particular Friend, that he might guess, as near as possible, how his Family of about 7 or 8 might be serv'd by such a Quantity of Ground with Things useful for the Table; and, without regarding any particular Taste of his, I was
desired

38 *Experiments, &c. in*

desired to introduce as many Sorts of Things as I thought Necessary and Useful; and I think, as I have dispos'd it, there will hardly be a want of any Herb or Plant throughout the whole Year, even tho' he does not declare his particular Fancy till after all is planted; for otherwise, as I hinted before, such a Spot of Ground adapted to the Mind or Custom of a Family, so that it should contain only some particular Things; Such a Ground, I say, might be made to supply 10 or 12 in Family, Pease excepted, provided it is not shaded with Standard Trees, for when those are found in such a Piece of Ground as this, altho' they are not planted very close together, yet such Herbs, Plants, or Roots, as are under or near their Shade, never thrive or come to good, tho' the Seeds were of the best kind.

The Reason why I except against Pease in such a Piece of Ground, when it is to furnish 10 or 12 in Family, is, Because they, in the first Place, take up more Room than any Plant belonging to the Kitchen Garden; and, in the next Place, a Crop of Pease, when it becomes fit for the Table, soon grows beyond the Table use; they grow old presently, and become fit for nothing but to save for Seed. Indeed some of the *Spanish Moretto* or *Rouncevals*, will bring good Crops, and

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and last a long time, with good Management; or we may set some of the smallest Dwarf Pease, so as to bring their Crops at different Times from those planted in the Neighbourhood.

From what has here been said, I suppose, it will not be difficult for any one to judge of the Product of any Quantity of Ground, and to direct how much of each Sort of Herb, Plant, or Root, should be raised in a Year for the Use of a Family of 6, of 10, 20, or any greater Number of Persons: And besides, we may yet expect no small Benefit from some Fruits which may be trained in Espaliers, and from Gooseberries and Currans, which may be planted in proper Places in the same Garden; but we must always have a Regard to place such Plants at good Distance from one another, so as to have the Air and Sun free and open where we raise any of the Herbs or Roots which we sow Annually, otherwise they will run upright, and never SET to any Substance.

I cannot well conclude this Piece, without putting my Reader in Mind, That in *August* and *September* it will be a proper Time for him to examine the Fields for Mushrooms: In order to provide himself with that sort of Earth which is found about their Roots, and is full of fine
White

White Threads, and sometimes has little White Knots appearing here and there in it; for this Earth contains what is necessary for the Production of Mushrooms, and must be kept dry till we apply it to our Mushroom Beds. I generally put it in a Paper Bag, and keep it in a Room where there is a Fire; for if it meets with Wet, or Moisture, it rots, and when our Mushroom Beds are made according to Art, every bit of such Earth half an Inch Cube, will furnish a Quantity of Mushrooms which will spread their Roots near two Foot. The *French* Gardeners save large Quantities of this Sort of Earth every Year, and keep it in large Clods in a dry Room till they use it in their Beds; and tho' it is kept sometimes for 12 Months, yet when it comes to be buried half an Inch in the Beds, which are moderately warm, and has been water'd for a few Days, it springs out Mushrooms. I have a Prospect this Season of getting a large Quantity of this kind of Earth, which I hope will be a means of prevailing with some of our Gardeners to begin this Piece of Gardening, which will furnish us at every Season of the Year with this valuable Curiosity. We are to note, That a common flat Hot-Bed will not serve to raise Mushrooms upon to turn to any Account; for the

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we find them often upon Old Melon-Beds, yet their Growth there is uncertain: But a Mushroom-Bed, properly made, will give us a Crop in a Month or Six Weeks after making; Which I shall explain as fully as possible, as soon as I have try'd some few Experiments that are now at Work.

There is one Thing which I cannot pass by in this Place un-observ'd; which is, That after we have taken Pains to establish a good Garden, we find ourselves often at a Loss to know how to use the several Parts of its Furniture either to our Pleasure or Advantage; and for want of such Skill, the better Half of our Product is commonly thrown away: 'Tis therefore I am industrious to usher into our World, that useful Piece written Originally by Monsieur Chomel, and printed at Paris, called *Dictionary Oeconomique*, or by us, *The Oeconomical, or Family-Dictionary*; which is carefully improved from some of the best Writers of other Countries, as well as the Curious of our own Nation; so that I do not know any Book extant, which is more publickly Useful, or privately Beneficial, that treats of the same Subjects. The Undertaker of these Two Large Volumes being now very much advanced in the Work, by Subscription, I am still the more forward to take this Notice of it.

G

I have

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I have now no more to say, relating to the Subject of the foregoing Month, and shall therefore proceed to give my Reader a very curious Letter, communicated by an Ingenious Gentleman,



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THE
Monthly Register
OF
EXPERIMENTS
AND
OBSERVATIONS
IN
Husbandry and Gardening.

For the Month of JULY, 1722.

To Mr. BRADLEY, &c.

SIR,

INCE you are arrived
to that Perfection, as to be
able here at Home to make
Climates answerable to any
whatever assign'd Abroad,
and produce Equatoreal Heat in the
Latitude of Fifty-one and a half; and since
by that means we shall be able to pro-
pagate in *England* whatever Fruits, Plants,
or Flowers, which being either Useful,
G 2 Curious,

44 *Experiments, &c. in*

Curious, or Profitable, are produced in the warmer Climates ; and which, I doubt not, but in time it will be thought a National Interest to have naturaliz'd here : I believe, it will not be improper for Seamen to cultivate a Correspondence with you, since thereby we may perhaps point out something but little, if not intirely unknown to our *English* Gardens.

Indeed, Two Things have prevented Sea-faring Persons from bending their Thoughts this way : First, A Persuasion that Vegetables produced in those hot Climates, could not live with us ; which Impediment you have now removed by your Stoves, Hot-beds, &c. The Second is, That we being but little acquainted with the Vegetable World, know not which are Rarities, which not ; which you have already got, and which are intirely unknown to you. Which Difficulty I hope you will also remove by publishing a Catalogue of such *Exoticks* as you have already : and also, what others you would chiefly wish to be brought over to you ; as likewise the Methods of doing it with most Likelyhood of Success. In the mean time, I shall venture to mention to you some Things which I thought most remarkable, when I us'd the Sea ; not doubting your candid Acceptance of my well Meaning, however imperfect my
Per-

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Performance may be. And the first thing I shall take Notice of, is, The *Palm-tree* of *Guinea*, the Juice of which is not only a pleasant Drink, but also reckon'd so effectual against the Stone, that I have heard the old *Guinea* Surgeons give their Opinion, That it would as easily dissolve the Stone in the Bladder, as Water does Loaf-Sugar. And I can speak on my own Experience, that it is a most excellent Diuretick, and so effectually cured me of the Gravel, that I have not been troubled with it these 23 Years since.

Palm Oyl is also excellent in several Cases, as Aches, Sprains, Bruises, Swellings, and also often taken inwardly by the *Negroes*; but for what Distempers I had not Language enough to inform my self.

Their *Yamm* is of the Potato-Tribe, but vastly larger; it is more mealy, is of a larger whiter Grain, which shines like that of double-refin'd Sugar, and is extremely nourishing.

The *Coco-Nut* is pleasant to the Taste, and the Milk or Water contain'd in it Diuretick; but the Tree being very tall, and a slow Grower, will hardly be worth our attempting here.

The *Water-Melons* are a most curious Fruit, and deserve our greatest Application; There are two Sorts, the Red and the White, but the Red are best, They
are

46 *Experiments, &c. in*

are eaten commonly cut out in Slices, but the Pulp mashed, and eaten with *Madera* Wine and Loaf Sugar, is incomparably fine.

I come now to our *West-Indies*, where they have a *Red Potato*, which is as sweet as a Parsnip: And at *Barbadoes* they make of it a very pleasant Drink, which they call *Mobby*, which I believe would take mightily with our Quality here in Summer; for it cools, and must be good against Consumptions, as all the Potato-Tribe are; and, to take off the Windness of its being bottled, 'tis generally drank with Wine.

The *Barbadoes China-Orange* far exceeds the *Lisbon* in the Richness of its Juices. They have also a Fruit of the *Orange* Tribe called a *Shaddock*; 'tis from four to eight times as big as an *Orange*: 'Tis a most noble Fruit to look at, and not unpleasant to the Taste; besides, the Blossom is very large, sweet, and fine, like the *Orange*; There are Two Sorts of it, the Red and White; the Red is the preferable.

The *Guava* is a very good Fruit, so is *Plantain*; but the *Bonana* is very fine, and could it be produced here, would answer the Cost and Trouble. The *Lime* is very good against the Scurvy, and some prefer the Punch made of it, before that of Limons; 'Tis hardy, and whereas it grows

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grows well in the Island *Majorca*, where they have sometimes much Snow, I doubt not but it would thrive with us, and make a most beautiful Ever-green Hedge. I wonder the *Sugar Cane* has never been attempted in our Stoves, upon the Account of its being the finest of Pickles.

The *Mango* of *Malabar* would be of great account in our Gardens, and would be prized more for the Deliciousness of the Fruit, than the Excellency of the Pickles. And since I am upon the Subject of Pickles, I have heard that our large white Plumb has been attempted with Success that way. And that the small Capers of *Majorca*, are thought to exceed the large Ones of *Toulon*.

The *Indian Corn* is what I believe would very well deserve our Cultivating here; for if an Acre of Reeds is worth two Acres of Corn, here you would have Reeds and Corn too, and the Corn (besides several other Uses) is so excellent for fattening Hogs, that it makes their Fat hard as Brawn, and not flabby, as ours generally is; The Reeds make a lasting and impenetrable Thatch, small Fences, &c. and the Produce is prodigious.

The *Cranberry* would also be very well worth your Care; it would bear our Winter abroad extremely well, and would

re-

48 *Experiments, &c. in*

require the Stove only in Summer, when your other *Exoticks* are all abroad.

I much admire that none of our Quality have essay'd to make the *Virginia Nightingale* and *Mocking-bird* Natives of this Island; for tho' that Country is hotter in Summer than ours, yet they have some Winters colder. A Friend of mine, who had a Grove near his House, had one got loose, who continued in the Grove 'till *January*, that some Boys came a Shooting that way, after which it was never heard of. If we were but industrious this way, our Woods would in a short time Rival our Operas; and our Songsters from *America*, put those from *Italy* out of Countenance. I should not even doubt, but that the *Jamaica* Nightingale, with his most sweet Note, might be Naturalized here; since the Turtle-Dove, which is a Native of the hotter Climes, does very well wild in our Woods, as I have often observ'd between *Petersfield* and *Portsmouth*.

'Tis a Pity, no-body has essay'd to make the *Prickle-pear* of *Jamaica* useful: I am perswaded it would make a beautiful and lasting Dye, if any ingenious Person would set heartily and in good earnest about it.

When I contemplate on that eternal Verdure, which reigns over all that Part of the Torrid Zone that I have been in, I

am

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am amazed from whence it is, that Nature supplies those vast Trees and other Vegetables, with Moisture sufficient to maintain them, not only with Life, but in flourishing Beauty, without one Drop of Rain for Six Months together; a parching Sun daily exhausting them, and the Earth so dry, as to be cleft several Yards deep: Should I conjecture 'tis from the vast Dews that fall every Night, it would thence undeniably follow, That there is a Circulation of the Juices in Vegetables; and that the Branches assist the Roots, as well as the Roots the Branches: But this is a Piece of Philosophy not yet universally establish'd, and which I must leave to your Greater Genius and Experience to enlarge upon. Being, with all Submission.

S I R,

Your Most Humble Servant,

Octob. 4th 1722.

S. C.

To Dr. Bradley, R.S.S.

The foregoing Letter, has Four Things in it, which I esteem to be highly considerable in Point of Gardening, and its Use. The *First* is, Of Climates, and of their being Artificially made with us: The *Second* is, To find out the best Methods of Importing Foreign Plants to this
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Kingdom. *Thirdly*, The Necessity of making known to the World, the Uses and Virtues of such Exotick Plants, as are brought to us. And, *Lastly*, What is extremely worth our Consideration ; which is, That Plants have a considerable Share of Nourishment, which they draw from the Air, by way of their Leaves and Bark, as well as from the Earth and Water by means of their Roots.

As to the first Part of this, which intimates, That we have in some measure initiated the warmest Climates of the World here in *England*, by Artificial Heats ; It is true, we have now in Practice several Ways, which have been lately try'd for the Production of Heats of almost every Degree necessary for the Welfare of Plants of Foreign Countries, and the last Year has given me the Pleasure of finding, that those Methods I have recommended in my former Papers, have had such good Success, that more Gentlemen have taken that Part of Gardening upon them, in the last twelve Months, than has been known for many Years before. 'Tis evident too, That where we can, by such means, render Exotick Plants any ways useful, tho' there is some little Expence or Trouble in bringing it about, yet a little extraordinary Trouble, when it is crown'd with reasonable Profit, will not be grudged by

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by the Undertaker. The late Instance of bringing the *Ananas* or Pine-Apple to Perfection in *England*, by the Ingenuity of of Mr. *Telende* at Sir *Matthew Decker's*, has so far gained upon the Curious, that already many of our Nobility have undertaken the same Improvement; and 'tis not to be doubted, but a Year or two more, will make this Undertaking much more General; And then I have good Hopes of seeing my Desires completed, of introducing all the *West-Indian* as well as *East-Indian* Fruits among us. But there is one Caution I must give my Reader by the bye, concerning the Use of *Tanners-Bark*, which is the principal Ingredient contributing at present to the raising these Plants of the Hot-Countries, and the Hints I shall offer, will, I hope, prevent some few Mistakes, which are now likely to happen to some of the Practitioners, who too rashly judge of *Tann* or *Tanners-bark*, thinking that it is capable of warming a large Body of Air above it, in the same Degree that the Body of Bark is warm'd below by Fermentation. Those who have not fallen into this Error, I suppose, have strictly follow'd the Dimensions and Method of Mr. *Telende's* Hot-Beds; that is to say, They have made the Frames for their Hot-Beds of *Tanners-bark*, exactly of the same Dimensions of those

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at Sir Matthew Decker's at *Richmond*, and, besides allowing the same Quantity of *Bark* to each Bed, take Care likewise to have Repositories for their Pine-Apples in the Winter, of such sort as Mr. *Telende* sets the Plants under his Care into, in the Winter-Season, which is regulated by Fire only: And this I find necessary for the Winter is, because, as the *Bark* has not a Power of itself to warm a large Quantity of Air above it, so the Plants that are set into it in the Winter, tho' it will warm their Roots and set them growing, yet the Leaves or Parts above Ground being restrain'd from Growth by the greater Cold of the Air above, cannot receive the Nourishment into them that the Roots receive from the Earth; for which Reason, where the *Bark* is used in Winter, we should have some other Artificial Warmth to regulate the Air above, and dispose the Leaves or Branches of such Plants as have their Roots plunged in the *Bark*, to receive Nourishment from them, or else put the Air above into such a State as may help to feed the Plants. I suppose, that this can be only done by Fire, or, in other Terms, an Air warm'd by means of Fire, and then the Space above the Bed of *Bark*, may be more extensive than otherwise can be allow'd. Where these two Warmths concur, it is not to be doubted

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doubted but any Plant of the warmest Clime may grow there, and we must remark, That in Mr. *Telende's* Frames there is such a Proportion of Air for the Plants above the Bed of *Bark*, that the Sun in Summer can sufficiently warm it, for the Maintenance of the *Ananas*; but in the Winter we must have Recourse to other Help, such as that of Fire; for the Sun is not then strong enough to warm the Air above the *Bark*.

This *Bark* is likewise of extraordinary Use for making Plants strike Root quickly; and as there is little or no Steam rises from it, so the Leaves of such Plants will not be endangered, as oftentimes those are which are set upon Hot-Beds made of Horse-Dung.

We must observe too, That the *Bark*, when it is just taken out of the *Vats*, is subject to heat with Violence, and grow moldy on the Top, and then speedily lose its Heat; but the best *Bark* is that which has been out of the *Vats* about a Fortnight before we use it, and that will heat gently and gradually, and continue hot a long Time. But this by the bye.

The *Second* Thing to be considered, is, The Method of Importing Plants and Seeds from Foreign Countries with Safety; and how such Gentlemen who go abroad may judge of the Plants they meet with

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with in Foreign Parts, whether they may be acceptable to us, or not.

As to the bringing over of Seeds and Plants, I have been pretty Large upon that Head in my *New Improvements* and other Writings of Gardening; but I shall take occasion here, to mention Two or Three New Particulars which are necessary to be observed in those Cases: I have already said, That 'tis the best way to gather the Seeds in their Shells and Cases, and so to bring them to us; for besides the Help such Cases will be to preserve the Seeds during the Voyage, they will help to inform us of what Class or Order the Plants are of which they were taken from; or if we have occasion to bring over Plants in Boxes of Earth, we may sow some of the Seeds in those Boxes of Earth, especially those of the Tree-kind, because by that Time they come to us, they may be in some Forwardness to grow: But if we have not this Convenience, we may follow the Method sent me by a very curious Gentleman, whose Name I know not, but as it carries a Face of good Reason with it, as far as that can guide me, it has my Approbation, and it is this; When the Seeds are gathered, and as well dry'd as the Warmth of the Air of the Place can do, or a warm Pocket will do in three or four Days, then put them into a Glass Bottle,

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Bottle, or glazed Vessel, closely stopp'd, rather with a Stopple of the same Sort than with a Cork; for a Cork is apt to rot by change of Air: and then we must take care to have this Stopple well cemented with Pitch, or Bees-Wax and Rozin; the said Vessel must then be placed in a larger Jar, or Vessel of glazed Earthenware, and the intermediate Space between both, be filled with common Salt, even so as to cover the Stopple of the Seed-Bottle with Salt. By this Means, I judge, that it will be impossible for any of the Seeds to be injured in their Passage through different Climates; for yet I cannot discover, that any Sort of Insect can live in a Body of common Salt; or where Salt is the Medium justly regulated between the Air and the Body, then such Body cannot putrify so as to be render'd a proper *Nidus* for any Insect to lay its Eggs in: We have many Instances of Flesh that has not putrified after it has been well prepared with Salt, and it is as rational to think, that Seeds or Plants may be as well preserved by it, when we consider the Ways of Pickling some Sorts of Fruits, which by only putting Salt to them, they are preserved many Months, when of themselves they would rot and be destroyed in a few Days.

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This Salt also corrects the extraordinary Heat of the warmer Climates, and by its being thus made the Wall, as I may call it, between the hot Air and the Seeds, so through its Fixation and Coldness, it is not to be supposed, that the excessive Heat of the hottest Climates can penetrate through it, so as to occasion any considerable Decay in the Seed: And we may consider likewise, That as this Salt is first fixed by extraordinary Heat, so we cannot suppose, That while the Seeds are passing through the hot and dry Climates, the Salt can suffer any great Change or Alteration; and so it is as natural to suppose, That the Seeds which are under its Shelter, cannot be much altered; and we well know, that a Climate about the Latitude of ours, is rarely disposed to melt Salt, so that under such Shelter we can hardly find any Seeds to be brought to us that will not be in good Perfection. And this has led me often to admire at the Principles in Nature, that dispose some Bodies to fix themselves from Liquids by Violent Heat, and others, which are in their Principle as Liquid, to be only fixed by Entrance of Cold. 'Tis a Subject worth Consideration, and will greatly help to the Design which we have now before us; but my present Opportunity will not allow me to inlarge upon it, only by the bye
I shall

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I shall observe, that some Plants do not grow in the Summer Months, but only have a vegetative Motion in the Winter; and others are only in Motion in the Summer, and upon the least Approach of Cold, are fixed, and lose their Vegetation.

But to return to my Subject; We are next to consider of the best Means for the Transportation of the Plants themselves, and that may be done, in a short Voyage, without any Earth about the Roots, if they are Trees of any Substance, that is to say, of an Inch, or an Inch and Half Diameter in the Stem; but they must be very clear of Wet before they are pack'd up, otherwise there will be a Ferment about their *Bark* which will destroy them. I have known some Trees, which have grown after they have been without Earth for Ten Months, Orange Trees especially; and a Willow Twig, which I used to carry in my Hand for more than Ten Months, is now, after Five Years sticking in the Side of a Bank, become a good Tree.

But for Transporting of Plants, which require Earth to grow in while they undergo a long Passage, I can give no better Directions than what I have lately observed in a Letter of Mr. *Mark Catesby*, a very ingenious Gentleman, written from *Carolina* to Mr. *Fairchild*, concerning the

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Carriage of Plants by Sea, which he has had good Experience of, as appears from the many Varieties of *Virginia* Plants which of late Years he has sent over to *England*; and is as follows.

To Mr. FAIRCHILD.

S I R,

I Desire when you send Plants by Shipping to remote Parts, to send them in Tubs, and not in Baskets; for Baskets contribute much to the Miscarriage. Winter is the best Time; October if it could be, and to put the Tubs in the Ballast, which keeps them moist and moderately warm. So managed, I have had best Success with Plants from England; for on the Quarter-Deck they are often wetted with Salt Water, and require the greatest Tendance from bad Weather, and even with the greatest Care they miscarry, as they did with me. It is so hot in the Hold in Summer, that they spend their Sap at once, and dye, so that that is not a Time to send any Thing.

Mark Catesby.

I had almost forgot one Thing, relating to the Carriage of Seeds from one Place to another, which this Gentleman usually practised with Success, *i. e.* That
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he always used to put the Seeds in the Shell of a Gourd, and seal them up, and by that means I have not known them to miscarry, in several Parcels which he has sent from *Virginia* to *England*.

Now we are come so far, it is necessary that we observe, that a Catalogue, however necessary it is, of those Plants which will be acceptable to us, will fill up a larger Volume than I propose in these Monthly Writings; and then too we are in want of many of the Names, given them by the People of the Countries where they grow, and to call them only by the Names given them by our *Botanists*, would not be intelligible to any but such as have studied *Botany*; so that at present, I know no better Way than advising in general all those Gentlemen who use the Sea, and are disposed to collect either Plants or Seeds Abroad, to let them be chiefly of such Sorts as are useful in their Timber or in their Wood for Dying, or in their Roots, Fruits, &c. for Physick or Diet. Indeed so far we may venture to prescribe, in particular, that the *Guava* brought over to us in Plants, suppose of an Inch Diameter in the Stem, and likewise the *Tamarind*, in the same State, might be made to prosper with us; and so too the *Plantains* and *Banana's* of the *West-Indies* should be brought to us in

I 2 Plants

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Plants of some Strength, if we expect to have the desired Success with them; the Cinnamon-Tree also from *Ceylon*, the *Pimento* from *Jamaica*, and any other Spice-Trees rather in Plants than in Seeds; or if the fresh Seeds of the Nutmeg could be gathered, they may be planted in a Tub of Earth about Two Inches deep, or coated with Clay about Two Inches thick, or dipt in Bees-Wax. Ginger without curing, if the Roots are moderately dried in the Pocket or the Sun, will come well to us: The Mango is likewise very desirable, and I doubt not, but the Stones, if they are preserved in Clay, or Bees-Wax, or Earth, may be easily made to grow here with our Stoves. I am persuaded, by some Experiments made by *William Parker* of *Healing*, Esq; that all Plants which have Rezinous Juices, will bear our Climate without Shelter; for that curious Gentleman has already tried a vast Variety of those Kinds in the open Ground, and some of them, which are Natives of the warmer Climes, are as unconcerned at our Winters, as if they were Natives of our own Climate; and I have found, that the Plants of *China* and *Persia* do very well with us. As for Melons, Water-Melons, Gourds, or Pumpkins, and Squashes, we have already, I believe, most of the Sorts, though there
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are few among us that use their Fruit, except of the first Sorts.

The Gentleman who has been so kind to send me the Letter which has occasion'd these Observations, mentions a Thought of his concerning the Naturalizing the *Lime*, or Wild Lemon, as some call it, in our Climate. I find, that this sort of Plant is apt to bear Fruit plentifully with us, and to ripen its Fruit well, which is a certain Sign of its Welfare in our Latitude, and all the Orange or Lemon Race are hardy enough to stand the Winter with us, in common Green-houses ; and even some are hardy enough to stand abroad in our most Southern Quarters.

The greatest Adventure of this kind that ever was attempted in *England*, was that famous Introduction of the Orange-tree and Myrtle by Sir *Francis Carew* and Sir *Walter Raleigh*, who whilst they resided in *Spain* in Queen *Elizabeth's* Time, chose these Fruits for our general Entertainment, and first made them familiar to our Climate in the Year 1585, when these Great Men discover'd the building of the *Spanish Armado* against us. Tradition informs us, these Orange-trees were immediately brought to *Bedington* in *Surrey*, one of the Seats belonging to the ancient Family of the *Carews*. They were then in Cases, and there was at first no other Safeguard

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guard for them in the Winter, than setting them into a Pit in the Ground, and covering them in severe Weather with Boards and Straw ; and they were thus preserv'd for several Years, 'till at length it was judged practicable to plant them in the natural Ground, where they have remain'd in extraordinary Health and Vigour, by giving them only a little Shelter in the Winter by means of a Frame of Timber, which could be taken to pieces at Pleasure. But now the worthy Gentleman Sir *Nicholas Carew*, who at present is the Possessor of that fine Seat, has exceedingly adorn'd these beautiful Trees, by building a new Conservatory for their Defence in Winter, which is so elegantly contrived, that tho' the Trees in themselves may be esteem'd one of the Wonders of our Country, their new Place of Shelter gives them so great a Lustre, that it seems as if the same curious Design which was begun by the Learned Predecessors of this Family, is still supported and maintained by their worthy Successor : And this is the more valuable, as it is remarkable, That few Great Families have the same Spirit kept up for Two Generations ; what is set up by the Father, is destroy'd by the Son ; what is bought by one, is sold by the other, &c. &c.

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These Orange-trees were the first that ever were known to be brought into *England*, and the first likewise that were set in the natural Ground; and from the extraordinary Produce of Fruit in these, I doubt not but that we have been encouraged to undertake the Culture of this Noble Tree, and have now made it to be so familiar with our *English* Soil and Climate: And we have likewise an Instance of the good Growth of the Lemon, and its bearing Fruit, even in the natural Ground, at a Gentleman's at *Petersham* near *Richmond*; But this, as I am told, has some little Shelter in the Winter to defend it from the severest Frosts. However, in *Devonshire* there are some Oranges which grow abroad without it.

I have, in some of my *Monthly-Observations*, taken Notice of the famous Orange-Trees at *Bedington*, soon after I was first surprized with their Beauty: But as to their Dimensions, I can now more particularly explain my-self, from the Account I have got from Mr. *Henry Day* the ingenious Gardener who now has the Management of them. "The Orange-Trees, says he, at Sir *Nicholas Carew's* "at *Bedington*, are Fourteen Foot high "from the naked Ground; for in these "there is not the Advantage of any Addition, such as a Pot, Tub, or Case
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“ to be reckon’d in their Height : The
 “ Girt of the Stem is 29 Inches, and the
 “ Spreading of the Branches is 12 Foot
 “ one Way, and 9 Foot another, these
 “ are continually full of Fruit, which
 “ ripen perfectly, and are as compleatly
 “ adorn’d with Flowers.”

Among these Trees, is a Myrtle of the *Spanish* Broad-leav’d kind, which is above 18 Foot high, and spreads 45 Foot ; and if we joyn to this, the Myrtles I have seen growing in *Devonshire* in the natural Ground, I cannot see Occasion for any great Use of Fire for these Sorts of Plants, as there is commonly used in our Green-houses ; but, indeed, when Plants are in Pots, they are much more subject to suffer by the Frost, than if they had the Possession of the free Ground ; and the more woody the Plants are, they are still the more hardy.

I believe, I may venture to say, That Plants, which are Natives of the hotter Climates, will thrive much better with us, if they come to us in grown Plants, than if they were to be brought in the Seed. Among other Things, I would desire, that the Rivers, Bogs or Lakes, in the several Foreign Parts, be examined, and that, without Scruple, any Herb or Plant growing therein, if it has Seed which is ripe or near ripe, may have

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have the Seed gather'd, and put into an earthen Vessel, with Water and Earth. *N. B.* Some of these ripen their Seed under Water : They might thus be brought to us, and if it is remarked, whether they grow in running or standing Water, we can easily propagate them with us. In these Sorts of Plants, any one may be sure to bring us something new, if he will take the Pains to gather the Seeds ; for, as yet, I do not know any, but myself, who has brought any new Water-plant to *England*, or has ever attempted it ; and some of them are very surprizing in their Manner of Growth. I could wish, likewise, that we could get some Plants or Seeds of Pepper to grow with us, and some of the true Rhubarb, if possible, for this last has not yet grown in *Europe*, as I could ever find ; though once, I remember, the late ingenious Mr. *Jacob Bobart* thought he had got it.

The *Hollanders*, who are certainly the most industrious People in the World, make it a great Part of their Business to collect Plants from all Parts of the World, in order to chuse out those which may be useful to them, either at Home or in some of their *West-Indian* Plantations, and the States there, give great Encouragement to such as do their best Endeavour in this Way ; for that Nation

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finds its Advantage by so doing, as in one particular Instance is evident; and that is, In cultivating Coffee in *Surinam*, which, with great Difficulty, they first got from *Arabia Felix* to *Batavia*, and thence to the *Cape*, so to *Amsterdam*, and then to *Surinam*, whither they first sent it in the Year 1714, and I now am inform'd, that the *Surinam* Plantation has already born a good Quantity of Coffee; but I think it would be much more the Interest of our Nation to encourage the Importing of strange Plants, than any other upon Earth, seeing the Happiness of our Soil and Situation, and the great Variety of Climates in which we have Plantations or Settlements abroad. I have already been the Occasion of planting several Millions of Ever-green Oaks in *England*, and have naturalized the Caper to our Climate, with several other Plants of Use; but the Plague raging about *Thoulon*, I have not been able to get Seeds over to make the Caper as common in *England*, as I design'd it; but I doubt not but in a few Years we might have Capers enow of our own Growth to serve the Nation; and tho' the Value of them may not perhaps be thought considerable, yet we are sure they will sufficiently pay the Rent of the Place, and every Little which

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which is gain'd to a Nation, is an Advantage to it which should not be disregarded.

But I come now to my Third Proposition, which is, That when we gather Plants abroad, we should, if possible, learn the Names they are called by in the Country, and their Use or Virtues, and some Notice taken of their Soil and Situation, but especially the Climate; and, if it could be done, we should know the Humour of every Climate a Plant is brought from; that is, How long the Heats last, and when the Rains begin to fall and terminate; for by these Hints we may be sure of making every Plant Lasting and Valuable to us, which may be brought from any Part of the World. And for the Degree of Heat required to imitate every Climate, I have now so far proved it by several Experiments, that I have directed the making of Regulated Thermometers on Purpose for this Use, by that very ingenious Operator in Mathematical Instruments, Mr. *John Fowler*, at the Globe in *Swithin's Alley* near the *Royal Exchange, London*, who is so justly admired by all that know him for his good Understanding of every Thing which falls in the Way of his Profession.

As for the Birds mention'd by my Correspondent, which might be brought from

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other Countries to be made familiar with us, it is certainly to be done, and will succeed very well; for we have had many Instances of Fowls both of the Land and Water, which have done very well with us; as for Example, Those collected by Admiral *Churchill*, the Earl of *Portland*, the Duke of *Ormonde*, Mr. *Dubois*, and some private Gentlemen of my Acquaintance, where even the Birds and Fowls of the hottest Climes, seem'd to rejoice as much in our open Air, as if they had been at Home, even so far as to lay their Eggs, and breed with us as well as any of our domestick Fowls. At the Duke of *Portland's* especially, there were Parrots, which for several Years, and, as I am inform'd, are at this Day, flying wild in his Woods; but I do not hear that they yet breed, though, I think, I could find a Means to bring them to it. Canary-birds are bred here without Difficulty, if we give them Shelter, and I am inform'd by a Person of Honour, That he had two Paroquets had young ones hatch'd at his House. Indeed, the two latter are generally kept in Houses, and therefore, having more Warmth, may be excited to breed; but I am persuaded we might bring them to breed in the open Air, by a Method which I have experienc'd among some foreign Fowls with Success,

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Success, and after a little more Knowledge in it, design to communicate: Nor need we despair even of preserving and continuing with us those Birds and Fowls which are Birds of Passage, such as Woodcocks, Quails, Nightingales, and even Storks themselves; for we have had many Instances, that Woodcocks have bred in *England*, and that Quails have lived with us the Year about, and Nightingales have been kept with us for several Years; and I remember a Stork that has tarry'd one whole Winter in Health with us. It has been supposed by some, that this last Bird retires to the Moon in the Winter, or, with more Probability, as far as *China* or its Confines: But wherever Nature directs these to go when they have their natural Liberty, yet we find, that when they are restrain'd by Accident from leaving us at the Seasons of Passage, they can subsist with us for several Years; so that 'tis possible to tame them, and keep them with us constantly, as well as other Fowls; or else, if we were to have them young, and at once allow them the Freedom of our Fenny Countries, I suppose they would be as constant to us as they are to other Countries. I am persuaded, that the Isle of *Ely* and Fens in *Lincolnshire*, would furnish them sufficiently with Food, such as Frogs and Fish, &c. to intice them

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to use those Places every Summer, notwithstanding the old ridiculous Notion, that they will not breed in any Government but a Common-Wealth ; 'Tis their Food and right Treatment which engages them and all other Birds and Fowls to any Place. And so, therefore, if we have a Mind to have a Rookery, we may, I suppose, easily compass it by Breeding up a good Number of young Rooks tame, and letting them loose a little before Breeding-time, where there are high Trees. And Nightingales also, may be bred tame, and turn'd out where there are Bushes ; and I have been told, they have bred every Year in the same Place, by such Means. We have also Instances enough of Foreign Beasts, which have been naturalized to our Climate. But, indeed, there is no Occasion for any of them to come among us, but such as are Beasts of Burden, or are proper for Food : The Camel and Dromedary, I think, would be of Service to us, for carrying Burdens, and their Swiftness. So, likewise, I have known, that Fish has been brought hither from the *East-Indies*, and has lived several Years ; and at this Day, Mr. *John Warner*, a curious Gentleman at *Rotherhith*, has some Sorts of Fish in his Ponds which he brought from *Germany*. So that, in a Word, I am of Opinion, that there is not any Beast, Bird, Fish, or Plant,

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Plant, which may not be brought to live with us, and many of them to be so naturaliz'd to our Climate, as to breed and prosper with us only, by being a little taken Care of in their Food. But we must observe, That when we introduce either Animal or Vegetable, we must imitate, as much as possible, the Mode of their Life in their own Country; for this must be preserved equally, whether we have a Quadrupede, a Bird, a Fish, a Vegetable, or even an Insect, if we propose Success in our Undertakings.

I have yet to consider one Part of this Letter, which relates to a very Capital Point in Vegetation; *i. e.* The Way which Nature takes to help the Growth of Plants, and preserve their Life, besides what Nourishment they get from the Earth through their Roots.

My curious Correspondent observes, That in some of the hotter Climates, the Earth is without Rain for Six or Seven Months together, and is so much parched and dried every Summer Season, that there is hardly any Moisture to be found in it for three or four Foot deep, and the Heats are so excessive during that Time, that without the refreshing Dews of the Nights, (which are very considerable) the Plants must inevitably perish; for they can have no Moisture but what they

they receive from the Dews; and that Moisture, he tells me, supports the Trees and Plants in a flourishing State: for the Leaves, by the excessive Heat of the Sun, contract themselves towards the End of the Day, but expand themselves, and become more explain'd by the falling Dews of the Nights; so that they possess a most agreeable Verdure in the Mornings and first Parts of the Day: From this Moisture, likewise, of the Dews, the same Plants receive Nourishment enough to bring Fruit to Perfection. Thus is the Case of Plants in hot Countries, as my Correspondent intimates in his Letter; and, as he well observes, helps very much to explain the Motion of the Sap, or, in other Terms, its Circulation; for by these Dews feeding the Leaves in the Nights, the whole Plant is nourish'd so as to support itself against the extreme Heats of the Day.

The Fact alone may be disputed by such People as have not been led beyond the Limits of their own Country; or, at least, have not had some Experience in the Culture of Exotick Plants; In the latter, which is next our View, we find, that when we confine a Plant from the Air in a common Conservatory, by keeping the Windows and Doors close shut for a few Days, the Leaves of that Plant will

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turn Yellow, or of a pale Colour, which is a certain Token of Sickneſs; and if then we continue to confine it without the Freedom of freſh Air, we muſt give it over for loſt; this is certain, Experience furniſhes us with Examples of it every Day. We may then be aſſured, 'tis not the Nouriſhment drawn by Roots alone which ſupports a Plant; but the Air muſt likewise contribute: there is a Moiſture in the open or freſh Air which is imbibed by the Spongy Parts in a Plant, that communicates itſelf to its principal Parts, and helps to nourish the Veſſels through which the common Juices move in their Circulation, as it is in the Caſe of an Animal Body, which being confin'd from free Air, cannot be Healthful.

We have a remarkable Inſtance of the great Helps which Plants receive from the Air, in the ſeveral Sorts of *Sedums* and ſome *Aloes*, which being taken in Branches and Slips, and hung up in ſome Room where the Air has a free Paſſage, thoſe Branches and Slips will remain Firm and Green for many Years; and moreover, when the Air is tending to Moiſture, theſe Branches and Slips will put forth Roots, which ſometimes ſhoot to a very great Length and Thickneſs; but at the Approach of dry Weather, or if they are debarr'd from free Air, they ſhrink and dry up. This ſpringing of Roots from the

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Parts

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Parts of Plants which never had any Roots before, denotes, that there is every Property in the Air which is necessary for the Growth of Plants, though not for the Nourishment of Plants ; for the Roots are thus made by frequent Changes of Weather. We find the Plants do not enlarge themselves, but decrease gradually in their Substance: 'Tis then, the Air which chiefly contributes to explain and unfold the several Parts of Plants, and the Earth only contains such Juices as are necessary to feed and nourish these Parts which the Air contributes to bring forth. But what I have already said in some of my former Treatises concerning the *Anatomy of Plants*, will give us a better Light into this curious Scene of Nature, and will plainly shew us, That all the Parts of a Plant are so interwoven one with the other, that not any one Part of the Body can be affected, but all the rest must share with it ; which cannot be accounted for without allowing, that there is a Circulation of Juices in Plants, and that the Air is absolutely necessary to assist in that Operation, by preserving the several Parts in a way of Action.

Another Instance to prove the Necessity of Air to support Plants is, That when Plants, such as Orange-Trees and some others, have been a long Time without Earth, such as their Case is when they
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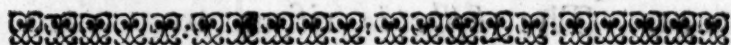
are in their Passage from *Genoa* to us, we find no Remedy so good to bring their Vessels to a right Tone, or to prepare them for Action, as to lay them, for a few Days, upon a Piece of Ground in a Shady Place. The *Effluvia* rising from such Ground, moistening the Air, reforms the Vessels, which at first laying down were shrunk, and dispose them for the Reception of the Juices of the Earth. Whenever those Plants are set into it, they will then grow liberally; but if they were to be immediately planted from the Chests they were brought in, without Preparation of this Kind, their Growth would be hazardous: Which is all I shall say at this Time relating to the Letter.

By way of Conclusion, I am to acquaint my Reader, that the Fine Piece of *Mosaick* Work, or *Roman* Pavement, found at *Woodchester* in *Gloucester-shire*, by my worthy Friend *Edmond Browne*, Esq; is not yet quite perfected: But as he informs me, that I may soon expect that Favour from him, I chuse to decline the publishing of that Part of it, which I delineated some time ago, and design'd for these Papers; supposing the Whole together will be much more acceptable to my Readers.

The Gentlemen who have any Thing new and instructive to communicate, are desired to send their Letters directed for me at Mr. *Fowler's*, Mathematical Instru-

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ment Maker, at the *Globe* in *Smithin's Alley*, near the *Royal-Exchange*, *Cornhill*; And any one who is desirous of my Advice, may readily command it.



To Mr. BRADLEY.

S I R,

*A*ccording to your Desire, I send you an Account of what extraordinary Flowers blow in my Garden in June and July. I am,

Your humble Servant,

T. FAIRCHILD.

Flowers for the Month of JUNE.

Great Apocinum of *Virginia*; White Wall-Flowers, and several other uncommon Kinds; the *Turkey* and Sweet Scabious, various Kinds; Ash-colour & White-Flower'd-Tree Scabious; several Kinds of Fox-Gloves; Mules Two Sorts; Candy-Tuft-Tree; Sweet Williams; All the Sorts of Lillies of the Valley, Sweet Lilly Asphodils, Day-Lilly, The *Roman* and Flaming Lilly, The White Lilly striped with Scarlet; Sedums several Sorts; great Variety of Daisies; Fine Ranunculas; Double-Creeping Crow-Foot; Sea-Daffodil; various Kinds of Columbines; Ladies Mantle; Tree Spurge; Onion-

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Onion-leav'd Asphodil ; Aloe-leav'd Asphodil ; Rosemary-leav'd Buck-Thorn ; Geraniums several Sorts ; Palma Christi ; Scorpion Senna, and Bladder Senna ; Convolvulus ; Scrophularia ; Blue-flower'd Genista ; Holy-oaks ; some Carnations ; Oranges and Lemons ; Roses ; Four Sorts of Corn Flags ; Small White-flower'd Female Cystus, and Large Gum Cystus, Dwarf Yellow-flower'd Cystus ; Globe-flower'd Rockets, Double and Single ; White and Purple Iris ; Ten Sorts of Flag Iris, Collection of Boulbous Iris ; Peach leav'd Bell Flower ; White and Blue *Canterbury* Bells ; Dwarf Bell-flower'd-Tree ; Milkwort ; Nettle-leav'd Jesamine ; Valerian White and Red, *Greek* Valerian ; White and Blue Sea Pink ; Yellow Moly, Sweet scented Moly, *Indian* Serpents, and *Homer's* Moly ; several Sorts of Heart's-Ease ; great Blue-Bottle, Savoy and Tradescants Spiderworts ; Fraxinella White and Red ; Blue Monks-Hood ; Blue-Feather'd Hyacinth ; Double White and Red Batchelors Buttons ; Germander, and Germander-leav'd Chickweed ; *Italian* Honyfuckle ; *French* Honyfuckles ; *Virginian* Astragalus ; Syringa ; *French* Willow ; *Turkey* Lichness, Tree Lichness ; Early White and Red Honyfuckles ; Tree Cinquefoil ; Dwarf Broom ; Moon-trefoil ; Lotus Tree ; *Spanish* Broom ; Yellow, White and Red Yarrow ; Pomegranates ;

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granates ; Yellow, White, Common and Imperial Martagons ; Double White Mountain Ranunculus ; Calaminth ; Goats Rue White and Blue ; Double and Single Scarlet Lichness ; Larks Spurs ; Horned Poppies, Ever-Living, Black, and other Poppies ; Sweet and Everlasting Pease ; White Jessamine ; Yellow *Indian* and *Spanish* Single and Double Jessamine, Yellow and *Virginia* Jessamine ; Mastick-Tree ; Three Sorts of Thrift ; *French* Sage ; Single and Double Virgins Bower ; *French* Bean-Tree ; Spirea Frutex, and Currant-leav'd Spirea ; Double and Single feather'd Champion ; Two Sorts of Ornithogalum ; Golden Rod ; Sir *George Wheeler's* Tutson ; Mountain Scabious ; *Deptford* Pink ; Two Sorts of Limoniums ; Dwarf Mountain - Milkwort ; several Sorts of Ficoides ; Four Sorts of Tongue-leav'd Aloes ; Lichnoides ; *Virginian* Purple Sun Flower ; Fennel Flower ; Double and Single White and Blue Throatworts.

Flowers for the Month of JULY.

ORanges and Lemons ; Annual Stocks ; Ash-colour and White Tree Scabious, Sweet-scented and Mountain Scabious ; Collection of Carnations ; Two Sorts of Mules ; Sweet Williams ; Roman, Orange and Day-Lilly ; Sedums
seve-

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several Sorts; Rosemary-leav'd Buck-Thorn; several Sorts of Roses; Peach-leav'd Bell Flower Two Sorts, and Dwarf and Steeple Bell Flowers; Double Creeping Crowfoot; Valerian White and Red, *Greek* Valerian White and Blue; Four Sorts of Hearts-Ease; Great Blue Bottle; Tradescants Spiderwort; Double White and Red Batchelors Buttons; *Virginian* Astragalus; *French* Honyfuckles; *French* Willow; Annual Lichness, Tree Lichness, Double and Single Scarlet Lichness; Lichnoides; Lisymachia; Tree Milkwort, small Mountain Milkwort; Dutch, Late, Red, and Ever-Green Honyfuckle; Tree Cinquefoil; Yellow and Red Yarrow; *Spanish* Broom White and Yellow; White, Imperial, Scarlet and *Virginian* Martagon; Calamint; Three Sorts of Lavander; White and Blue Goats-Rue; Horned, Ever-living, Black and Common Poppies; Sweet Pease Scarlet and Common; Yellow, White, Blue and Scarlet Lupines; Colutea of *Aethiopia* and *Canada*; White Jessamine; *Virginian* Yellow, Common Yellow, *Spanish* Double and Single Jessamine; Common Spirea, and Currant-leav'd Spirea; Feather'd Champion, Double and Single Rose Champion; Double and Single Virgins Bower; Everlasting Pease; Starworts; Golden Rod of several Sorts; Spiked Speedwell; Two Sorts of Limoniums; Ficoides
several

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several Sorts; Winter Cherry; White flower'd Nightshade-Tree; Capsicums; Love Apples; *French* Bean-Tree; Myrtles; *African* and *French* Marigolds; Amaranthus and Balsamines; Four Sorts of Sun-Flowers; White Helebores, with a Black Flower; Oliander leav'd Tree Apocinum; Four Sorts of Gnaphaliums; Four Sorts of Olianders; Scarlet and Blue Cardinal Flowers; White and Yellow Mullen; Red and White Orpin, and the small Ever-Green Sort; Fritilaria Crassa, small and great; Two Sorts of Passion Flowers.

N. B. Subscriptions for the *Family-Dictionary* are taken in at Mr. Daniel Midwinter's, Bookseller, at the Three Crowns in St. Paul's Church-Yard, London.



END of the Months of June and July.

